

THE UNFIGURED MOLLUSCA OF J. THIELE, 1930 PUBLISHED IN *DIE FAUNA SÜDWEST-AUSTRALIENS*

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ABSTRACT

The type specimens of 12 species described by Thiele in *Die Fauna Südwest-Australiens* are figured for the first time. Some nomenclatural rectifications are made and descriptions based on translations of the original descriptions are given.

The species included are *Diodora plicifera*, *D. rugosa*, *D. nigropunctata* (all synonyms of *D. jukesii* [Reeve]), *D. ovalis* (synonym of *D. singaporensis* [Reeve]), *Calliostoma excellens* (synonym of *C. rubiginosa similarae* [Reeve]), *C. modestum*, *Cantharidus tristis* (synonym of *C. polychromus* [A. Adams]), *C. sericinus*, *Turbo menkei* (synonym of *T. haynesi* Preston), *Astraea tentorium*, *Scala tumidula* and *Phacoides pisiformis*.

INTRODUCTION

Johannes Thiele's (1930) account of the mollusca of Western Australia is the most comprehensive yet published. Many new species were described in this work and, curiously, although Thiele figured nearly all of the new small and minute species most of the larger new species were not illustrated. In the absence of figures it has been almost impossible for Australian malacologists to make an accurate assessment of several of Thiele's species. Consequently, the opportunity was taken during a brief visit to the Museum für Naturkunde, Humbolt-Universität, East Berlin, to photograph the type material of some of Thiele's unfigured Australian species. The remainder of the species are here illustrated with photographs supplied by Dr R. Kilias and one with a drawing from a photograph.

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No attempt is made to redescribe most of the species here dealt with, but a modified translation based on the original description is given under the heading 'Description'. Although comments are made on the taxonomy of some of these species, more detailed discussion on the status of several of the species names is considered to be beyond the scope of this paper. The generic position of most species has been interpreted in the broad sense, generally following the *Treatise on invertebrate paleontology*. For this reason the majority of species are not assigned to subgenera.

The data for the 'stations' referred to in the text are given by Michaelsen and Hartmeyer (1907).

GASTROPODA

FAMILY FISSURELLIDAE

DIODORA PLICIFERA THIELE, 1930: 562

(Plate 1, Figs 1-3)

Description

Sculpture similar to *D. subcalyculata* (Schepman) with 3 very strong posterior radial ribs and 6 weaker anterior ribs. Radial ribs crossed by distinct concentric rings. Form of shell differs from *D. subcalyculata* in being rather depressed, with an oval foramen behind the anterior $\frac{1}{3}$. Anterior slope straight, posterior slope somewhat arched. Aperture much longer than broad, internal foramen callus with posterior edge convex and lacks pit behind. Colour white.

Dimensions

Length 14 mm; width 8 mm; height 5 mm.

Locality

Station 1, NW of Middle Bluff, Sharks (= Shark) Bay, north-west Australia, 7-8 m, rocks and coral, (holotype) (reg. no. 67368).

Remarks

This species is a synonym of *Diodora jukesii* (Reeve) (see remarks under *D. nigropunctata*).

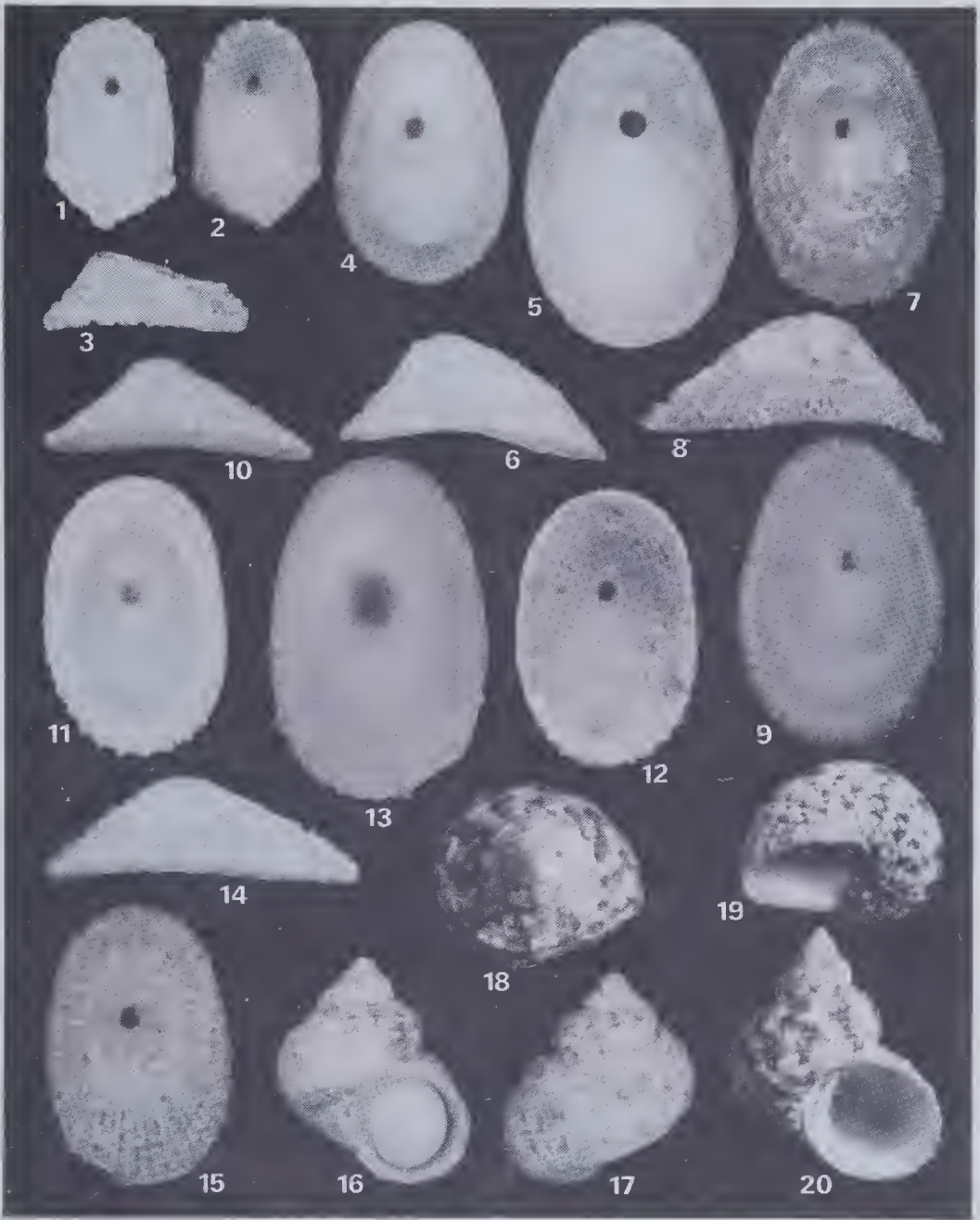


PLATE 1

Figs 1-3, 7-9, 13-15. *Diodora jukesii* (Reeve). 1-3. Holotype of *D. plicifera* Thiele. 7-9. Holotype of *D. rugosa* Thiele. 13-15. Holotype of *D. nigropunctata* Thiele. Figs 4-6, 10-12. *Diodora singaporensis* (Reeve). 4-6. Lectotype of *D. ovalis* Thiele. 10-12. Specimen from Cossack, W. Australia, identified by Thiele as *D. ovalis*. 16-20. *Turbo* (*Marmarostoma*) *haynesi* Preston. 16-17. Holotype of *T. menkei* Thiele. 18-20. Holotype of *T. foliaceus haynesi* Preston.

DIODORA RUGOSA THIELE, 1930: 562

(Plate 1, Figs 7-9)

Description

Similar to the eastern Australian *D. lineata* (Sowerby) but the sculpture is not so reticulated. The radial ribbing, which crenulates the shell margin, consists of strong ribs usually alternating with weaker ones. The fine concentric folds form scales at the intersections with the strong radials. Foramen rounded-rectangular, placed anterior to the centre, somewhat inclined forwards. Anterior slope nearly straight, posterior slope somewhat arched. Exterior colour brownish with indistinct broad, darker rays. Shell widest somewhat behind middle, distinctly narrowed anteriorly.

Dimensions

Length 51 mm; width 34 mm; height 20 mm. Foramen 4 mm x 2.5 mm.

Localities

Station 3, ca 5 km NW of Denham, Sharks (= Shark) Bay, north-west Australia, sand and rich vegetation (holotype) (reg. no. 67367). A smaller specimen (15 mm long) from station 15, NNE of the northern end of Heirisson Prong, Shark Bay, rocks with coral, 11-12.5 m.

Remarks

This species is also a synonym of *Diodora jukesii* (Reeve) (see remarks under *D. nigropunctata*).

DIODORA NIGROPUNCTATA THIELE, 1930: 563

(Plate 1, Figs 13-15)

Description

Shell with the radial ribs well separated and unequal in strength, especially at the posterior end where some stronger ribs are separated by groups of 3 weaker ribs. The anterior ribs consist of one somewhat stronger rib always alternating with a relatively weaker rib. Foramen a little in front of centre, rectangular. Anterior and posterior slopes hardly arched. White with dispersed black specks, internal callus of foramen blackish.

Dimensions

Length 24 mm; width 15.5 mm; height 7 mm.

Localities

Station 5, Denham, Sharks (= Shark) Bay, north-west Australia (holotype) (reg. no. 67366) and a young specimen from station 7, ca 4 km SW of Denham, 3 m, sand and mud with plants.

Remarks

This species, like *D. rugosa* Thiele and *D. plicifera* Thiele is a synonym of *D. jukesii* (Reeve). A large series of specimens from tropical Australia shows Reeve's species to be an extremely variable one. Features such as the strength of the ribbing, the accentuation of a few ribs (as in the types of *D. jukesii* and *D. plicifera*), the degree of scaled or frilled concentric sculpture, the posterior truncation or nontruncation of the internal foramen callus, the base outline, the relative height of the shell and the details of the shape of the foramen are all variable features even within the same population. The purple callus of *D. nigropunctata* is a feature that occurs in some specimens of *D. jukesii* throughout the range of the species and does not appear to be correlated with other shell features. The degree of purple coloration is variable, sometimes being reduced to a narrow line around the callus (as in the type of *Elegidion occiduus* Cotton, another synonym of *D. jukesii*).

A South Australian form, *D. lincolnensis* Cotton, is probably indistinguishable from *D. jukesii*, but insufficient material from intermediate parts of the range (south Western Australia and mid-Western Australia) is available to make a definite decision.

A partial synonymy of *D. jukesii* can be set out as follows:

Diodora jukesii (Reeve, 1849)

Fissurella jukesii Reeve, 1849: Plate 7, Fig. 45

Fissurella fimbriata Reeve, 1849: Plate 14, Fig. 104

Fissurella similis Sowerby, 1862: 194: Plate 241, Fig. 143

Diodora plicifera Thiele, 1930: 562

Diodora rugosa Thiele, 1930: 562

Diodora nigropunctata Thiele, 1930: 563

?*Diodora lincolnensis* Cotton, 1930: 219

Elegidion occiduus Cotton, 1930: 220; Cotton, 1959: 82: Fig. 41

?*Austroglyphis lincolnensis*.—Cotton, 1959: 80: Fig. 40

The types of all of the species listed in the above synonymy have been examined by the writer.

DIODORA OVÁLIS THIELE, 1930: 562

(Plate 1, Figs 4-6, 10-12)

Description

Like *D. singaporensis* (Reeve), but might be separated by its longer shell and its flat ribs. Anterior and posterior slopes nearly straight, sculpture of flat ribs, although these are angular in the middle of the shell, and are alternately broader and narrower and are crossed by weak, concentric folds. Exterior 'colourless' with about 6 weak, grey streaks; interior white (lectotype fawn externally with a few pale brown radial rays).

Dimensions

Length 29.9 mm; width 19 mm; height 12.4 mm; foramen 3.6 mm x 2.7 mm (station 1) (lectotype).

Length 23 mm; width 14 mm; height 7 mm; foramen 1.75 mm x 1.2 mm (station 14) (dimensions given by Thiele).

Length 11 mm; width 7 mm; height 4 mm (specimen from Cossack).

Localities

Stations 1 and 14, Sharks (= Shark) Bay, north-west Australia (2 specimens). Lectotype, station 1 (reg. no. 67369) (Plate 1, Figs 4-6). Station 1, NW of Middle Bluff, 7-8 m, rocks and coral.

Cossack (near Point Samson), north-west Australia, 1 specimen (reg. no. 67400) (Plate 1, Figs 10-12).

Remarks

The specimen measured by Thiele from station 14 in Shark Bay was not located and is not catalogued. In the register an entry written in 1930 lists the specimen from station 1 as the type. This specimen is here designated lectotype. Both the shell and animal are stored in alcohol.

This species is a synonym of *D. singaporensis* (Reeve), falling well within the range of variation exhibited by that species. A partial synonymy is given below:

Diodora singaporensis (Reeve, 1850)

Fissurella singaporensis Reeve, 1850: Plate 14, Figs 100 and 101

?*Fissurella mus* Reeve, 1850: Plate 16, Fig. 120

Fissurella tenuistriata Sowerby, 1862: 199; Plate 240, Fig. 111

Fissurella townsendi Melvill, 1897: 20; Plate 7, Figs 27 and 27a

Diodora ovalis Thiele, 1930: 562

All of the types of the species in the above synonymy, with the exception of the type(s) of *F. mus*, have been examined by the writer and appear to be conspecific. The type of *D. ovalis* is higher than typical specimens but *D. singaporensis* does show considerable variation in elevation. *F. mus* Reeve, 1850 is possibly conspecific with *D. singaporensis* but was described from unknown habitat from the now missing Metcalfe collection. As first revisor I select the name *singaporensis* for this species because it has existing type material, was described from a known locality and has page priority.

This species is distributed through the central Indo-Pacific and tropical Australia, and can be easily distinguished by its rather large, simple, oval foramen and relatively fine sculpture.

FAMILY TROCHIDAE

CALLIOSTOMA EXCELLENS THIELE, 1930: 565

(Plate 2, Figs 1 and 2)

Description

Similar in size and colour to *C. rubiginosa* (Valenciennes) but differs in not having the lowest 2 (or 3 in some specimens) spiral rows of beads protruding and forming the periphery of the body whorl, but instead the upper row of the 2 peripheral cords is stronger and the two rows do not fuse together as they do in *C. rubiginosa*. In this respect it is similar to *C. similarae* (Reeve) but that species is smaller and more finely sculptured. The whorls have, in addition to the 2 (sometimes 3) peripheral rows of gemmules, 4 or 5 (4-7 in additional material) gemmate spiral cords which have weaker spirals between them. The peripheral cords are visible at the base of each spire whorl. The base has 10 beaded spirals (8-13 in additional material) sometimes with an interstitial thread between each pair. The dorsal surface is whitish with brown blotches and the base is mostly brown with white spots, the central spiral cord (sometimes 2) rose-spotted. Upper peripheral cord spotted with rose and white, lower cord(s) with brown and white (or sometimes also with rose).

Dimensions

Height 26 mm; diameter 23 mm.

Locality

Houtman Abrolhos, Western Australia (holotype) (reg. no. 67364).



PLATE 2

Figs 1-2. *Calliostoma rubiginosa similarae* (Reeve). Holotype of *C. excellens* Thiele.

Figs 3 and 9. *Linga (Bellucina) pisiformis* (Thiele). Holotype.

Fig. 4. *Phasianotrochus sericinus* (Thiele). Holotype.

Figs 5-6. *Calthalotia modesta* (Thiele). Lectotype.

Figs 7-8. *Astralium tentorium* (Thiele). Holotype.

Fig. 10. '*Cantharidus*' *polychromus* (A. Adams). Holotype of *Cantharidus (Jujubinus) tristis* Thiele.

Remarks

Cotton (1959: 152) lists this species as a synonym of *Salsipotens rubiginosus* (Valenciennes, 1846) but repeats Thiele's differentiating characters. On p. 92, however, he lists, under the 'genus' *Laetifautor*, the species names *excellens* and *similaris* (Reeve, 1863). The examination of a range of material of *C. excellens* from north-west Australia shows the differentiating features noted by Thiele to be consistent. The particularly distinctive features of *C. excellens* are the nature of the peripheral ornament, there being a much sharper peripheral keel in *C. rubiginosa*, and the restriction of rose-coloured spots to the peripheral cord(s) and 1 or 2 of the central basal spirals. In *C. rubiginosa* every alternate basal spiral is rose-spotted and the peripheral spirals have no rose-colour, being only brown and white.

Specimens similar to the type of *Calliostoma excellens* are known from north of Houtman Abrolhos and NW of Bluff Point between Shark Bay and Geraldton (99 m) (WAM) through north Western Australia to Darwin (WAM), the Gulf of Carpentaria (AM) and Torres Strait (AM). *Calliostoma rubiginosa* occurs from approximately the vicinity of Fremantle to Bass Strait.

Calliostoma excellens is very similar to *C. similarae* (Reeve) described from Lizard Island, north-east Australia. The type of *C. similarae* has been examined by the author and with other available material it is clear they are part of the same species complex and are here regarded as synonyms. Thiele notes in his description of *C. excellens* that his species is larger and more coarsely sculptured than *C. similarae*. Certainly as far as one can determine from the available material, the north-western specimens tend to be larger than those few available from the north and east but this in itself is not of sufficient importance to separate taxa. The strength of sculpture varies and it is not noticeably stronger in north-western shells than in the other specimens.

The considerable morphological similarity of the shells of *C. rubiginosa* and *C. similarae* (as here interpreted) suggests that these two apparently geographically separated forms could be regarded as subspecies and this course is the one tentatively adopted here. The synonymy of both subspecies is outlined below:

- (a) *Calliostoma rubiginosa rubiginosa* (Valenciennes, 1846)
Trochus australis Broderip, 1835: 331; Plate 49, Fig. 3
(*non* Lamarek, 1822)
Trochus rubiginosus Valenciennes, 1846: Plate 4, Fig. 1
(no text issued)

Trochus nobilis Philippi, 1849: 86; Plate 15, Fig. 6, Plate 38, Fig. 1
(non Muenster, 1835)

Trochus broderipi Philippi, 1855: 257; Plate 38, Fig. 5

(nom. nov. pro *T. australis* Broderip non Lamarck)

?*Zizyphinus splendidus* (Philippi ms) Reeve, 1863: Plate 2, Fig. 11

Distribution: Southern Australia from Fremantle to Bass Strait.

Z. splendidus best matches specimens from Victoria which often have a very weak peripheral keel. This is the form illustrated by Macpherson & Gabriel (1962: Fig. 80) as *Calliostoma (Salsipotens) australe* (Broderip).

(b) *Calliostoma rubiginosa similarae* (Reeve, 1863)

Zizyphinus similaris Reeve 1863: Plate 5, Fig. 32

Calliostoma excellens Thiele, 1930: 565

Distribution: North-western Australia, northern Australia, Torres Strait and the northern Great Barrier Reef.

CALLIOSTOMA MODESTUM THIELE, 1930: 565

(Plate 2, Figs 5 and 6)

Description

Similar to *C. hedleyi* Pritchard & Gatliff in form and sculpture but has a different coloration and less dense spiral sculpture. Colour whitish with irregular grey spots. Body whorl very slightly convex with the periphery angled and with 7 nodulose spiral lirae. Base with about 10 weak, indistinctly nodulose spiral cords.

Dimensions

Height 18 mm; diameter 16 mm (from original description and these dimensions are those of the figured lectotype). Height 15 mm; diameter 15 mm (paralectotype).

Localities

Stations 19 and 28, Sharks (= Shark) Bay, north-western Australia ('a few specimens'). Only two specimens located, both from station 28 (reg. no. 67363). Station 28, Dirk Hartog, 2-4.5 m, sand with vegetation.

Remarks

The specimen illustrated is here chosen as the lectotype. This species is somewhat similar to, and obviously congeneric with, *Calthalotia arruense* (Watson, 1880) from northern Australia. The Shark Bay specimens differ from typical *C. arruense* mainly in their shorter spire and more heavily developed columellar callus. Thiele (1930) remarked that his new species was similar to *Calliostoma hedleyi* and Cotton (1959) suggested that it was a probable variant of that species. *C. hedleyi* however, belongs to the sub-genus *Fautor* (of *Calliostoma*) and is quite distinct from Thiele's species. *Calthalotia* Iredale, and *Prothalotia* Thiele, are probably very closely related groups but radular studies are required before their relationships can be more accurately assessed.

Specimens of this species have been examined from N of Delambre Is., Dampier Archipelago, north-western Australia, in 40-42 m (WAM); E end of Mary Ann Passage, Onslow, north-western Australia, in 13 m (WAM) and Ningaloo, S of North West Cape, north-western Australia, on beach (AM).

CANTHARIDUS (JUBUBINUS) TRISTIS THIELE, 1930: 567

(Plate 2, Fig. 10)

Description

Shell elongate conical, marbled with blackish-brown on a light background, sculpture of dense, fine spiral lirae, indistinct on upper spire whorls. Sides of spire straight, periphery of body whorl acutely angled, base flat.

Dimensions

Height 10.5 mm; diameter 7 mm.

Locality

Station 3, ca 5 km NW of Denham, Sharks (= Shark) Bay, north-western Australia, 3 m, sand with rich vegetation (holotype) (reg. no. 67360).

Remarks

Hedley (1907) recorded this species as *Calliostoma polychroma* (A. Adams) from Queensland and in a manuscript note made in June 1912, he records that an examination of the probable types of *Ziziphinus polychromus* A. Adams and *Z. picturatus* A. Adams, both from the Philippine Islands and both held in the British Museum (Natural History), shows them to be

identical and the same as the Queensland species. An examination of Adam's type material and material from the central Indo-Pacific indicates that this synonymy appears to be correct.

The tentative synonymy of this species can therefore be listed as follows:

'*Cantharidus*' *polychromus* (A. Adams, 1853)

Ziziphinus polychromus A. Adams, 1853: 168; Reeve, 1863: Plate 6, Fig. 40

Ziziphinus picturatus A. Adams, 1853: 168; Reeve, 1863: Plate 7, Fig. 53

Cantharidus (Jujubinus) tristis Thiele, 1930: 567

The generic location of this and related species is questionable. They appear to fall between *Cantharidus* Montfort, 1810 (s.l.) and *Jujubinus* Monterosato, 1884 in shell features. A more definite location, however, must await a detailed revision.

The Australian distribution of this species is from the southern Barrier Reef and Lord Howe Island northwards and westwards to Shark Bay, Western Australia. In Western Australia it appears to overlap in distribution with '*Cantharidus*' *lepidus* (Philippi, 1846) a closely related species common in south-western Australia and extending at least as far north as North West Cape. The typical form of *lepidus* differs from *polychromus* in its larger, broader shell and often darker coloration with a more complex colour pattern, but some specimens from the overlapping part of the range are difficult to place in either species. '*Cantharidus*' *lepidus* has been figured as *Calliostoma interrupta* (Wood, 1828) by Hodgkin *et al.* (1966: 19, Plate 4, Fig. 3) but that species name was given to a specimen from Ireland and the original illustration does not closely resemble '*C.*' *lepidus*. Wood's name is probably a synonym of *Cantharidus exasperatus* (Pennant, 1777), a common European species. '*Cantharidus*' *fournieri* (Crosse, 1863), '*C.*' *crenelliferus* (A. Adams, 1853) and '*C.*' *artensis* (Fischer, 1878) from New Caledonia also appear to be closely related to '*C.*' *polychromus*.

CANTHARIDUS SERICINUS THIELE, 1930: 567

(Plate 2, Fig. 4)

Description

Similar in form to *C. rutilus* (A. Adams), its 7 whorls slightly convex, glossy, and finely and densely spirally striated. Body whorl with angled periphery; base slightly convex. Colour of brownish spots on a pale greenish

background, the spots bigger on the upper whorls, small and rather regularly arranged on the body whorl. A green nacreous layer inside aperture.

Dimensions

Height 10.5 mm; diameter 7 mm.

Locality

Station 48, northern side of Port Royal (= Careening Bay), 14.5-18 m, mud and algae, Cockburn Sound, Western Australia (holotype) (reg. no. 67361).

Remarks

The type specimen is a sub-adult specimen of a species of *Phasianotrochus*. It is, as Thiele indicates, closest to *P. rutilus* (A. Adams, 1851) from Victoria and Tasmania. The only species seen by the writer from Cockburn Sound and its vicinity are *P. bellulus* (Dunker, 1845), *P. apicinus* (Menke, 1843), *P. irisodontes* (Quoy & Gaimard, 1834) and *P. eximius* (Perry, 1811). *Phasianotrochus irisodontes* is similar in shape and sculpture to *C. sericinus* but the examination of hundreds of specimens has shown that it always has a very characteristic colour pattern of fine red axial lines quite different from the essentially spiral arrangement of the brownish spots exhibited by Thiele's specimen. *Phasianotrochus apicinus* has a much more sharply angled periphery than Thiele's specimen when it is the same size and also has fine reddish axial lines. *Phasianotrochus bellulus* is smooth and has a very distinct colour pattern and *P. eximius* has a more sharply angled periphery and distinct, rather widely spaced spiral grooves. Although the real status of *C. sericinus* will have to await further work it is possible that it represents a chance introduction of *P. rutilus* or a mislocalized specimen.

FAMILY TURBINIDAE

TURBO (MARMAROSTOMA) MENKEI THIELE, 1930: 568

(Plate 1, Figs 16-20)

Description

Shell similar to *T. intercostalis* Menke in form and colour, but the operculum is totally different. The sculpture, although similar to that of *T. circularis* Reeve, does not totally agree and the form and coloration are different in that species. The shell is higher than wide, pale with green spots

and of about 6 convex whorls which are sculptured with heavy, weakly nodulose lirae which are alternately stronger and weaker. Spiral lirae on base rather weak and close, those at umbilical region merge to form a rather broad, white, nodulose pad. Aperture subcircular. Operculum white, convex at columellar side, with a weakly granulated surface and 2 distinct concentric furrows at the external edge.

Dimensions

Height 35 mm; diameter 29 mm.

Localities

Stations 3 and 21, Sharks (= Shark) Bay, north-western Australia ('a few' specimens). Only one specimen was located (reg. no. 67370), and this was labelled 'type'. It is not known from which of the two stations the type was taken.

Remarks

This species is conspecific with *Turbo foliaceus haynesi* Preston, 1914. The types of Preston's species of *Turbo* were examined in The National Museum of Wales, Cardiff and are here refigured for comparison (Plate 1, Figs 18-20). The synonymy is thus:

Turbo (Marmarostoma) haynesi Preston, 1914

Turbo foliaceus haynesi Preston, 1914: 15; Fig. (on p. 15)

Turbo (Marmarostoma) menkei Thiele, 1930: 568

Although this is a common species which appears to be endemic to tropical Australia it does not appear to have received an earlier name. It ranges northwards and westwards from Hervey Bay, south Queensland to at least as far south as Geraldton, Western Australia.

ASTRAEA TENTORIUM THIELE, 1930: 569

(Plate 2, Figs 7 and 8)

Bellastraea tentorium Hodgkin *et al.*, 1966: 23; Plate 6, Fig. 6

Description

Similar to the eastern Australian species *A. tentoriiformis* (Jonas) but differs in the characters of the operculum and the umbilical region. The shell is conical, with a sharp periphery, the whole dorsal surface covered by a chalky coating. Base flat, with dense spiral lirae. Adjoining the concave

columella is a narrow, violet basal callus which has, on its lower part a short groove. Operculum brilliant violet, centre fairly depressed, lighter in colour in lower part, being more rose-red, whereas the upper part is indigo-coloured.

Dimensions

Height 30 mm; diameter 40 mm.

Locality

Station 25, Surf Point, Outer Bar, at entrance to South Passage, Sharks (= Shark) Bay, north-western Australia, 0.5-3.5 m, sand and rocks with coral (holotype) (reg. no. 67358).

Remarks

This species is restricted to Western Australia, ranging from Cockburn Sound to Bernier Island off Shark Bay (Ponder 1975). The genus *Astraliium* is considered to be the most appropriate location for this species. The reasons for the use of this name as a full genus will be discussed in detail elsewhere.

FAMILY EPITONIIDAE

SCALA TUMIDULA THIELE, 1930: 578

(Text Fig. 1)

Description

Shell probably immature, colourless, imperforate; protoconch of 3 smooth whorls and teleoconch of 3 rapidly increasing, strongly convex whorls. Sculpture of rather dense, striae-like ribs which have close, delicate spiral threads between them. Body whorl relatively large, base without a cord; aperture oval, columellar edge rather broad, somewhat concave.

Dimensions

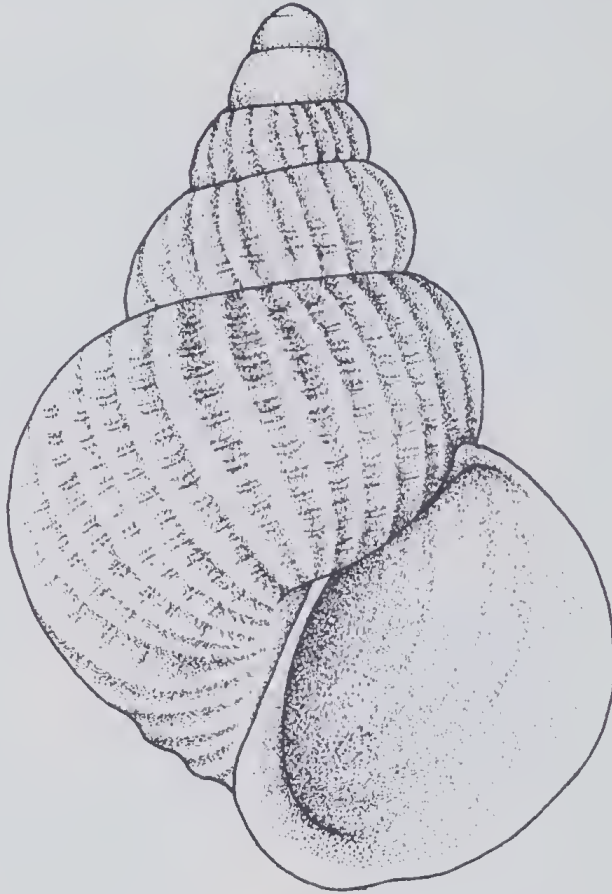
Height 1.9 mm; diameter 1.3 mm.

Locality

Station 3, ca 5 km NW of Denham, Sharks (= Shark) Bay, north-west Australia, 3 m, sand with rich vegetation (holotype) (reg. no. 67496).

Remarks

The unique specimen is a juvenile shell of uncertain species relationship. It is, however, an *Epitonium* in the broad sense and could not be included in *Berthais* Melvill, 1904, which Thiele suggests as a possibility.



Text Fig. 1: *Epitonium tumidula* (Thiele). Holotype.

FAMILY APLYSIIDAE

APLYSIA ANNULIFERA THIELE, 1930: 586

Remarks

This species was not examined, but Eales (1960: 307) has listed it in the synonymy of *Aplysia* (*Varria*) *dactylomela* Rang, 1828.

BIVALVIA
FAMILY LUCINIDAE

PHACOIDES (PARVILUCINA) PISIFORMIS THIELE, 1930: 592

(Plate 2, Figs 3 and 9)

Description

Differs from *P. eucosmia* (Dall, 1901) (= *pisum* [Reeve, 1850] *non* Sowerby, 1836) by its considerably denser, undulating concentric rings, by its more rounded form and presumably also by its smaller size. Dorsal margin concave anterior to beaks, but then suddenly becomes convex; posterior to beaks margin first weakly concave, then convex. Hinge and sculpture otherwise similar to the above species (left valve only).

Dimensions

Length 3 mm; width 2.9 mm.

Locality

Station 3, 5 km NW of Denham, Sharks (= Shark) Bay, north-west Australia, 3 m, sand with rich vegetation (holotype) (reg. no. 67726).

Remarks

Chavan (1969) lists *Bellucina* Dall, 1901 (type species, by original designation, *Parvilucina eucosmia* Dall) as a subgenus of *Linga* de Gregorio, 1884; further, Dall's species is synonymised with *Lucina semperiana* Issel, 1869.

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ABBREVIATIONS

AM — Australian Museum, Sydney, WAM — Western Australian Museum, Perth.

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